

Improved Coil and Clamp for Variable Reluctance Transducer

Abstract

Improved coils and clamps for variable reluctance sensors are disclosed. A method of fabricating a discrete coil involves providing a conductor wound in a coil on a tube. The coil has a coil outer surface that has insulation. A window is opened in the insulation on the coil outer surface to expose conductor of the coil for a contact. A movable core is provided within the tube for adjusting inductance of the coil. In one embodiment, the coil and tube are diced into small coils after the windows for each coil are opened. Another aspect the invention is a clamp comprising an elastic material, a shape memory alloy, and an apparatus for activating the shape memory alloy. The clamp holds the moveable core in its peak position. When the alloy is activated it changes shape and provides a force on the elastic material to change clamping state for resetting the transducer. The coils and clamps can be used for a variety of purposes in addition to the variable reluctance sensors.